Exhibit No.:
Issues: *Rate of Return*
Capital Structure
Witness: *David Murray*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Surrebuttal Testimony*
Case No.: *SR-2013-0016*
Date Testimony Prepared: *April 29, 2013*

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY SERVICES DIVISION

SURREBUTTAL TESTIMONY

OF

DAVID MURRAY

EMERALD POINTE UTILITY COMPANY

CASE NO. SR-2013-0016

Jefferson City, Missouri
April 2013

Ex 24

SURREBUTTAL TESTIMONY

OF

DAVID MURRAY

EMERALD POINTE UTILITY COMPANY

CASE NO. SR-2013-0016

Q. What is your name?

A. David Murray.

Q. Who is your employer?

A. The Missouri Public Service Commission.

Q. What is your current position with the Commission?

A. I am currently the Utility Regulatory Manager of the Financial Analysis Unit.

Q. What education, credentials and experience qualify you to provide an expert opinion in regard to carrying costs for the phase-in of an ordered rate increase?

A. Please see Schedule DM-1 for a full explanation of my experience, education and credentials.

Q. Did you file direct or rebuttal testimony in this case?

A. No.

Q. What is the purpose of your surrebuttal testimony?

A. My testimony addresses the Office of the Public Counsel ("OPC") witness Ted Robertson's rebuttal testimony as it relates to Financial Analysis' general methodology for estimating the cost of capital for small water and sewer companies. Staff witness Zephania Marevangepo will address Mr. Robertson's testimony as it relates to the specifics of his recommended rate of return for Emerald Pointe. Mr. Marevangepo provided Staff's

recommended rate of return for purposes of developing Emerald Pointe's revenue requirement in this case.

Q. What seems to be Mr. Robertson's major concerns with Staff's methodology for estimating a rate of return (ROR) for small water and sewer companies?

A. Mr. Robertson identifies at least two major concerns with Staff's methodology:

1. Staff's use of hypothetical capital structures;
2. Staff's use of generic utility bond yields to estimate the cost of equity when there is company-specific cost of debt.

Q. When did Staff implement its current procedure?

A. Approximately September 2010. The procedure is attached to this testimony as Schedule DM-2.

Q. How did Staff estimate the cost of capital for small water and sewer companies before the implementation of the current procedure?

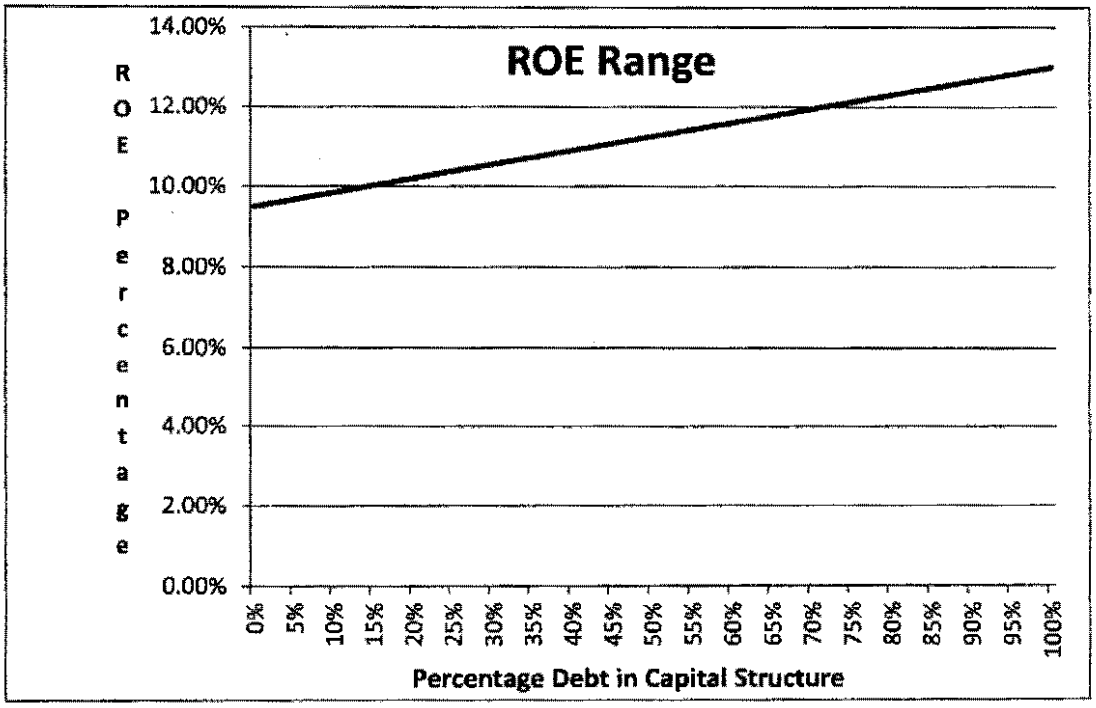
A. Staff developed an ROE range based on Staff's cost of equity estimate in a recent Missouri-American Water Company rate case and then adjusted the ROE as needed for the specific financial risk, i.e. capital structure, of the subject company (see Schedule DM-3 for the most recent version of Staff's previous methodology).

Q. Are you aware of any dockets in which the Commission specifically addressed the Financial Analysis Unit's current or previous methodology for estimating the cost of capital for small water and sewer companies?

A. No.

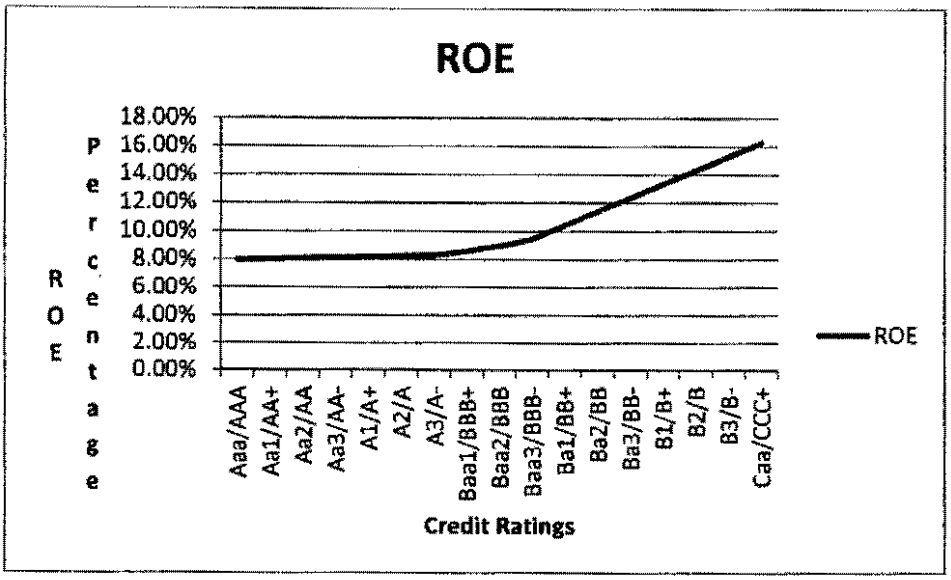
Q. How did Staff determine how much to adjust the ROE for additional amounts of leverage?

A. Staff used a simple linear relationship where the ROE would adjust proportionally to the change in leverage in the capital structure. A depiction of this relationship is shown below.



Q. Did the previous methodology accurately depict the appropriate amount of change in the required return as leverage reached higher levels?

A. No. Investors' required return on equity increases at a higher rate as leverage increases to levels consistent with non-investment grade credit ratings. The graph below shows this relationship for average public utility bond yields for the month of March 2013.



Based on S&P's published benchmarks, a utility company would rarely have an investment grade credit rating if it reached a leverage ratio anywhere near that of Emerald Pointe's or that of the hypothetical capital structure Staff uses when a company's debt ratio exceeds 75%.

Q. Does it become more difficult to reliably estimate the cost of equity for companies that have high levels of leverage and lower credit quality?

A. Absolutely. This is the reason Staff originally recommended a hypothetical capital structure for Emerald Pointe.

Q. How did Staff determine a cap of 75% debt to capital was appropriate for purposes of recommending a fair and reasonable rate of return?

A. By evaluating the benchmarks used by S&P for more reasonable amounts of leverage. S&P's financial risk benchmarks are typically limited to no more than a 10% variance. Although S&P's "Highly Leveraged" financial risk profile indicates any leverage higher than 60%, there simply is a practical amount of leverage a company could carry and

still be able to attract additional capital. Staff is not aware of any major rate case in Missouri in which a capital structure containing more than 75% debt was used to set the allowed rate of return. Because S&P's variance of 10% was within this limit, Staff considered 75% to be a reasonable cap.

Q. Mr. Robertson also takes issue with Staff's methodology as it relates to estimating the cost of equity by applying a risk premium to an average utility bond yield for an assumed credit rating. Mr. Robertson claims that it would be more appropriate to apply the risk premium to the utility company's actual cost of debt. How do you respond?

A. If Emerald Pointe had recently issued long-term debt directly to institutional investors in a private placement or through a public issuance, then I would agree. However, Emerald Pointe's access to debt capital is limited to commercial loan access with more restrictive terms than debt issued by Missouri's larger utility companies. While it may seem as if Emerald Pointe may be viewed as investment grade because the interest rate on its commercial loan is fixed at 5.50%, it is important to understand that this debt cost is a function of the terms of the loan, which has a very short maturity and an amortization requirement.

Q. During the same month in which this 5-year note closed, what was the average yield on a 'BBB'-rated 5-year public utility bond?

A. 2.02%.

Q. What was the average yield on a 'B+'-rated 5-year utility bond?

A. 5.05%.

Q. Would this seem to imply that if Emerald Pointe had been able to issue long-term debt that investors would have required a higher return on this debt?

A. Yes.

Q. Is it more appropriate to apply the risk premium Staff used to a long-term debt issuance or a short-term debt issuance?

A. A long-term debt issuance. The bond yield plus risk premium method Staff uses in its small utility ROR methodology specifically contemplates applying this risk premium to the yield-to-maturity on long-term bonds.[1]

Q. Do you have any final comments?

A. Yes. Although Staff's updated capital structure recommendation no longer calls for the use of a hypothetical capital structure, OPC has consistently been opposed to Staff's use of hypothetical capital structures for purposes of small water and sewer company rate cases. While Staff believes its methodology is fair and balanced, Staff notes the same disagreements arise in most every small water and sewer case in which Staff recommends a hypothetical capital structure. Although Staff does not have a specific proposal at this time on how to more efficiently handle these reoccurring issues, it would seem to be worthwhile to pursue a collaborative effort to determine a more efficient way to handle this common issue that arises repeatedly in small water and sewer cases.

Q. Does this conclude your testimony?

A. Yes it does.

[1] John D. Stowe, Thomas R. Robinson, Jerald E. Pinto and Dennis W. McLeavey, *Analysis of Equity Investments: Valuation*, Association for Investment Management and Research, 2002, p. 54.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Request for an Increase in Sewer Operating Revenues of Emerald Pointe Utility Company	))))	Case No. SR-2013-0016

AFFIDAVIT OF DAVID MURRAY

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

David Murray, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Surrebuttal Testimony in question and answer form, consisting of 10 pages to be presented in the above case; that the answers in the foregoing Surrebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

DAVID MURRAY

Subscribed and sworn to before me this 29th day of April, 2013.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: December 12, 2016
Commission Number: 12412070

Notary Public

DAVID MURRAY

Educational and Employment Background and Credentials

I am currently the Utility Regulatory Manager of the Financial Analysis Unit for the Missouri Public Service Commission (Commission). I accepted the position of a Public Utility Financial Analyst in June 2000 and my position was reclassified in August 2003 to an Auditor III. I was promoted to the position of Auditor IV, effective July 1, 2006. I was employed by the Missouri Department of Insurance in a regulatory position before I began my employment at the Missouri Public Service Commission.

I was authorized in October 2010 to use the Chartered Financial Analyst (CFA) designation. The use of the CFA designation requires the passage of three rigorous examinations addressing many investment related areas such as valuation analysis, portfolio management, statistical analysis, economic analysis, financial statement analysis and ethical standards. In addition to the passage of the examinations a CFA charterholder must have four years of relevant professional work experience.

In May 1995, I earned a Bachelor of Science degree in Business Administration with an emphasis in Finance and Banking, and Real Estate from the University of Missouri-Columbia. I earned a Masters in Business Administration from Lincoln University in December 2003.

I have been awarded the professional designation Certified Rate of Return Analyst (CRRA) by the Society of Utility and Regulatory Financial Analysts (SURFA). This designation is awarded based upon experience and successful completion of a written examination, which I completed during my attendance at a SURFA conference in April 2007. I also serve as a board member on the SURFA Board of Directors.

CASE PROCEEDING PARTICIPATION

DAVID MURRAY

Date Filed	Case Number	Company Name	Testimony Type	Issue(s)
10/10/2012	ER-2012-0175	KCP&L Greater Missouri Operations	Surrebuttal	Rate of Return
10/8/2012	ER-2012-0174	Kansas City Power & Light Company	Surrebuttal	Rate of Return
9/12/2012	ER-2012-0175	KCP&L Greater Missouri Operations	Rebuttal	Rate of Return
9/7/2012	ER-2012-0166	Union Electric Company d/b/a Ameren Missouri	Surrebuttal	Rate of Return
9/5/2012	ER-2012-0174	Kansas City Power & Light Company	Rebuttal	Rate of Return
8/14/2012	ER-2012-0166	Union Electric Company d/b/a Ameren Missouri	Rebuttal	Rate of Return
8/9/2012	ER-2012-0175	KCP&L Greater Missouri Operations	Cost of Service Report	Rate of Return Capital Structure
8/2/2012	ER-2012-0174	Kansas City Power & Light Company	Cost of Service Report	Rate of Return Capital Structure
7/6/2012	ER-2012-0166	Union Electric Company d/b/a Ameren Missouri	Cost of Service Report	Rate of Return Capital Structure
04/15/2011	ER-2011-0028	Union Electric Company d/b/a Ameren Missouri	Surrebuttal	Rate of Return Capital Structure
03/25/2011	ER-2011-0028	Union Electric Company d/b/a Ameren Missouri	Rebuttal	Rate of Return Capital Structure
02/28/2011	ER-2010-0356	KCP&L Greater Missouri Operations Company	True-up Rebuttal	Rate of Return Capital Structure
02/28/2011	ER-2010-0355	Kansas City Power & Light Company	True-up Rebuttal	Rate of Return Capital Structure
02/22/2011	ER-2010-0356	KCP&L Greater Missouri Operations Company	True-up Direct	Rate of Return Capital Structure
02/22/2011	ER-2010-0355	Kansas City Power & Light Company	True-up Direct	Rate of Return Capital Structure
02/08/2011	ER-2011-0028	Union Electric Company d/b/a Ameren Missouri	Cost of Service Report	Rate of Return Capital Structure
1/12/2011	ER-2010-0356	KCP&L Greater Missouri Operations Company	Surrebuttal	Rate of Return Capital Structure

CASE PROCEEDING PARTICIPATION

DAVID MURRAY

Date Filed	Case Number	Company Name	Testimony Type	Issue(s)
1/05/2011	ER-2010-0355	Kansas City Power & Light Company	Surrebuttal	Rate of Return Capital Structure
12/15/2010	ER-2010-0356	KCP&L Greater Missouri Operations Company	Rebuttal	Rate of Return Capital Structure
12/08/2010	ER-2010-0355	Kansas City Power & Light Company	Rebuttal	Rate of Return Capital Structure
11/17/2010	ER-2010-0356	KCP&L Greater Missouri Operations Company	Cost of Service Report	Rate of Return Capital Structure
11/10/2010	ER-2010-0355	Kansas City Power & Light Company	Cost of Service Report	Rate of Return Capital Structure
05/06/2010	WR-2010-0131	Missouri-American Water Company	Surrebuttal	Rate of Return Capital Structure
04/15/2010	WR-2010-0131	Missouri-American Water Company	Rebuttal	Rate of Return Capital Structure
03/09/2010	WR-2010-0131	Missouri-American Water Company	Cost of Service Report	Rate of Return Capital Structure
03/05/2010	ER-2010-0036	Union Electric Company d/b/a AmerenUE	Surrebuttal	Rate of Return Capital Structure
02/11/2010	ER-2010-0036	Union Electric Company d/b/a AmerenUE	Rebuttal	Rate of Return Capital Structure
12/18/2009	ER-2010-0036	Union Electric Company d/b/a AmerenUE	Cost of Service Report	Rate of Return Capital Structure
10/14/2009	GR-2009-0355	Missouri Gas Energy	Surrebuttal	Rate of Return Capital Structure
09/28/2009	GR-2009-0355	Missouri Gas Energy	Rebuttal	Rate of Return Capital Structure
08/21/2009	GR-2009-0355	Missouri Gas Energy	Cost of Service Report	Rate of Return Capital Structure
04/09/2009	HR-2009-0092	KCP&L Greater Missouri Operations Company	Surrebuttal	Rate of Return Capital Structure
04/09/2009	ER-2009-0090	KCP&L Greater Missouri Operations Company	Surrebuttal	Rate of Return Capital Structure
04/07/2009	ER-2009-0089	Kansas City Power & Light Company	Surrebuttal	Rate of Return Capital Structure

CASE PROCEEDING PARTICIPATION

DAVID MURRAY

Date Filed	Case Number	Company Name	Testimony Type	Issue(s)
03/13/2009	HR-2009-0092	KCP&L Greater Missouri Operations Company	Rebuttal	Rate of Return Capital Structure
03/13/2009	ER-2009-0090	KCP&L Greater Missouri Operations Company	Rebuttal	Rate of Return Capital Structure
03/11/2009	ER-2009-0089	Kansas City Power & Light Company	Rebuttal	Rate of Return Capital Structure
02/13/2009	HR-2009-0092	KCP&L Greater Missouri Operations Company	Cost of Service Report	Rate of Return Capital Structure
02/13/2009	ER-2009-0090	KCP&L Greater Missouri Operations Company	Cost of Service Report	Rate of Return Capital Structure
02/11/2009	ER-2009-0089	Kansas City Power & Light Company	Cost of Service Report	Rate of Return Capital Structure
08/01/2008	HR-2008-0300	Trigen-Kansas City Energy Corporation	Cost of Service Report	Rate of Return Capital Structure
01/18/2008	GR-2008-0060	Missouri Gas Utility, Inc.	Cost of Service Report	Rate of Return Capital Structure
07/31/2007	WR-2007-0216	Missouri-American Water Company	Surrebuttal	Rate of Return Capital Structure
07/13/2007	WR-2007-0216	Missouri-American Water Company	Rebuttal	Rate of Return Capital Structure
06/05/2007	WR-2007-0216	Missouri-American Water Company	Direct	Rate of Return Capital Structure
12/27/2006	GR-2006-0422	Missouri Gas Energy	True-up Direct	Rate of Return Capital Structure
12/11/2006	GR-2006-0422	Missouri Gas Energy	Surrebuttal	Rate of Return Capital Structure
11/21/2006	GR-2006-0422	Missouri Gas Energy	Rebuttal	Rate of Return Capital Structure
10/13/2006	GR-2006-0422	Missouri Gas Energy	Direct	Rate of Return Capital Structure
08/18/2006	ER-2006-0315	Empire District Electric Co.	Surrebuttal	Rate of Return Capital Structure
07/28/2006	ER-2006-0315	Empire District Electric Co.	Rebuttal	Rate of Return Capital Structure

CASE PROCEEDING PARTICIPATION

DAVID MURRAY

Date Filed	Case Number	Company Name	Testimony Type	Issue(s)
06/23/2006	ER-2006-0315	Empire District Electric Co.	Direct	Rate of Return Capital Structure
12/13/2005	ER-2005-0436	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P	Surrebuttal	Rate of Return Capital Structure
11/18/2005	ER-2005-0436	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P	Rebuttal	Rate of Return Capital Structure
10/14/2005	ER-2005-0436	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P	Direct	Rate of Return Capital Structure
11/24/2004	ER-2004-0570	Empire District Electric Co.	Surrebuttal	Rate of Return Capital Structure
11/04/2004	ER-2004-0570	Empire District Electric Co.	Rebuttal	Rate of Return Capital Structure
09/20/2004	ER-2004-0570	Empire District Electric Co.	Direct	Rate of Return
07/19/2004	GR-2004-0209	Missouri Gas Energy	True-Up Direct	Rate of Return Capital Structure
06/14/2004	GR-2004-0209	Missouri Gas Energy	Surrebuttal	Rate of Return Capital Structure
05/24/2004	GR-2004-0209	Missouri Gas Energy	Rebuttal	Rate of Return Capital Structure
04/15/2004	GR-2004-0209	Missouri Gas Energy	Direct	Rate of Return Capital Structure
03/11/2004	IR-2004-0272	Fidelity Telephone Company	Direct	Rate of Return Capital Structure
02/13/2004	GR-2004-0072	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P	Rebuttal	Rate of Return Capital Structure
02/13/2004	ER-2004-0034	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P	Surrebuttal	Rate of Return Capital Structure
02/13/2004	HR-2004-0024	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks-L&P	Surrebuttal	Rate of Return Capital Structure
01/26/2004	HR-2004-0024	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks L&P	Rebuttal	Rate of Return Capital Structure

CASE PROCEEDING PARTICIPATION

DAVID MURRAY

Date Filed	Case Number	Company Name	Testimony Type	Issue(s)
01/26/2004	ER-2004-0034	Aquila, Inc. dba Aquila Networks-MPS and Aquila Networks L&P	Rebuttal	Rate of Return Capital Structure
01/09/2004	WT-2003-0563	Osage Water Company	Rebuttal	Rate of Return Capital Structure
01/09/2004	ST-2003-0562	Osage Water Company	Rebuttal	Rate of Return Capital Structure
01/06/2004	GR-2004-0072	Aquila, Inc.	Direct	Rate of Return Capital Structure
12/19/2003	ST-2003-0562	Osage Water Company	Direct	Rate of Return Capital Structure
12/19/2003	WT-2003-0563	Osage Water Company	Direct	Rate of Return Capital Structure
12/09/2003	ER-2004-0034	Aquila, Inc.	Direct	Rate of Return Capital Structure
12/09/2003	HR-2004-0024	Aquila, Inc.	Direct	Rate of Return Capital Structure
12/05/2003	WC-2004-0168	Missouri-American Water Co	Surrebuttal	Rate of Return Capital Structure
12/05/2003	WR-2003-0500	Missouri-American Water Co	Surrebuttal	Rate of Return Capital Structure
11/10/2003	WR-2003-0500	Missouri-American Water Company	Rebuttal	Rate of Return Capital Structure
11/10/2003	WC-2004-0168	Missouri-American Water Company	Rebuttal	Rate of Return Capital Structure
10/03/2003	WC-2004-0168	Missouri-American Water Company	Direct	Rate of Return Capital Structure
10/03/2003	WR-2003-0500	Missouri-American Water Company	Direct	Rate of Return Capital Structure
03/17/2003	GM-2003-0238	Southern Union Co. dba Missouri Gas Energy	Rebuttal	Insulation
10/16/2002	ER-2002-424	The Empire District Electric Company	Surrebuttal	Rate of Return Capital Structure
09/24/2002	ER-2002-424	The Empire District Electric Company	Rebuttal	Rate of Return Capital Structure
08/16/2002	ER-2002-424	The Empire District Electric Company	Direct	Rate of Return Capital Structure
08/06/2002	TC-2002-1076	BPS Telephone Company	Direct	Rate of Return Capital Structure

CASE PROCEEDING PARTICIPATION

DAVID MURRAY

Date Filed	Case Number	Company Name	Testimony Type	Issue(s)
01/22/2002	ER-2001-672	UtiliCorp United Inc. dba Missouri Public Service	Surrebuttal	Rate of Return Capital Structure
01/22/2002	EC-2002-265	UtiliCorp United Inc. dba Missouri Public Service	Surrebuttal	Rate of Return Capital Structure
01/08/2002	ER-2001-672	UtiliCorp United Inc. dba Missouri Public Service	Rebuttal	Rate of Return Capital Structure
01/08/2002	EC-2002-265	UtiliCorp United Inc. dba Missouri Public Service	Rebuttal	Rate of Return Capital Structure
12/06/2001	ER-2001-672	UtiliCorp United Inc. dba Missouri Public Service	Direct	Rate of Return Capital Structure
12/06/2001	EC-2002-265	UtiliCorp United Inc. dba Missouri Public Service	Direct	Rate of Return Capital Structure
05/22/2001	GR-2001-292	Missouri Gas Energy, A Division of Southern Union Company	Rebuttal	Rate of Return Capital Structure
04/19/2001	GR-2001-292	Missouri Gas Energy, A Division of Southern Union Company	Direct	Rate of Return Capital Structure
03/01/2001	TT-2001-328	Oregon Farmers Mutual Telephone Company	Rebuttal	Rate of Return Capital Structure
02/28/2001	TR-2001-344	Northeast Missouri Rural Telephone Company	Direct	Rate of Return Capital Structure
01/31/2001	TC-2001-402	Ozark Telephone Company	Direct	Rate of Return Capital Structure

Small Utility

Return on Equity (ROE)/Rate of Return (ROR)

Methodology

Prepared by

Financial Analysis Department
(Shana Atkinson, Zephania Marevangepo and David Murray)
Utility Services Division
Missouri Public Service Commission
September 2010
(updated in August 2011)

Financial Analysis Small Water and Sewer Return on Equity (ROE) Determination

Although the Financial Analysis (FA) Department's small water and sewer (W&S) rate case procedure had been premised on adding a range of risk premiums to the FA Department's cost of equity estimate in the most recent Missouri-American rate case, the FA Department decided to revise its generic procedure to allow cost of equity estimates for small water and sewer companies to be more responsive, current and specific than its old procedure. The FA Department's new procedure is based on a fairly generic risk premium methodology. Staff will apply a "standard" risk premium to a reasonable estimate of the current cost of debt for the subject company to arrive at an estimated cost of equity. Because small water and sewer companies typically don't issue debt that is actively traded, the FA Department must rely on its estimate of the subject company's credit rating and then determine a recent average cost of utility debt for this rating based on data the FA Department receives from its current source for utility debt yields, BondsOnline. The Department then adds the "standard" risk premium to this current cost of debt to estimate the cost of common equity. These capital costs are then applied to the appropriate weights in the capital structure to estimate a fair and reasonable rate of return.

Recommended Formula:

Recommended Return on Common Equity = Reuters Public Utility Bond Yield average of the past three months from BondsOnline + 3-4% risk premium.

This formula is based on the bond yield risk premium method for estimating the cost of equity. According to the textbook *Analysis of Equity Investments: Valuation* (2002) by John D. Stowe, Thomas R. Robinson, Jerald E. Pinto and Dennis W. McLeavey (used as part of the curriculum in the Chartered Financial Analyst Program), a typical risk premium added to the yield-to-maturity (YTM) of a company's long-term debt is in the 3 to 4 percent range. For purposes of estimating the cost of common equity for Missouri's larger electric, gas and water utilities, FA Staff believes at least the low end of this risk premium range is appropriate considering publicly-traded utility stocks exhibit investment characteristics very similar to bonds. Consequently, the low end of the risk premium estimate will be considered for companies that are not privately held or are subsidiaries of publicly-traded parent companies. However, the high end of the risk premium estimate may be used for privately owned small water and sewer companies that are not considered to be marketable from an acquisition standpoint.

Estimated Bond Rating:

In order to estimate the cost of debt for the subject company (assuming there is no current reasonable yield on the subject company's cost of debt), the FA Department must estimate the credit rating of the subject company. The FA Department's estimate of the subject company's credit rating will be restricted to credit ratings within the range of 'AAA' to 'B'. Because most regulated small water and sewer companies in Missouri do not issue debt either directly or indirectly (through a parent company), they do not have a published credit rating. Therefore, in such cases the FA Department will use the May

27, 2009 Standard & Poor's ratings matrix as a guide to estimate the water and sewer utility's credit rating. This guide allows the FA Department to estimate a credit rating based on an assessment of the business and financial risks of the small water and sewer utility. Based on S&P data available for the water companies it rates, these companies have a financial risk profile ("FRP") no lower than "Aggressive" and business risk profiles ("BRP") of "Excellent."[1] Although S&P assigns an "Excellent" BRP to all of the water and sewer companies it rates, Staff believes that due to the fact that some small water and sewer companies have trouble receiving debt financing, this should be considered in assigning BRPs for purposes of estimating the cost of equity for small water and sewer companies. Staff will determine the BRP of a company by assessing the company's access or potential access to debt capital. If a company proves to Staff that they cannot obtain a loan or the company can obtain a loan but has to pledge personal assets in order to do so, then Staff would classify the company's BRP as "Satisfactory." If the company can obtain a commercial loan without having to pledge personal assets, then Staff would classify the company as having a "Strong" BRP. If a company or its parent can issue debt directly to capital providers, then Staff would classify the company as having an "Excellent" BRP. The FRP of a company will be estimated by determining the company's Debt/Capital ratio and comparing it to the following S&P's benchmark ratios:

Financial Risk Indicative Ratios (Corporates)

	Debt/Capital (%)
Minimal	less than 25
Modest	25-35
Intermediate	35-45
Significant	45-50
Aggressive	50-60
Highly Leveraged	greater than 60

 [2]

S&Ps Business and Financial Risk Profile Matrix states that the ratings indicated in each cell of the matrix are the midpoints of a range of likely rating possibilities. This range would ordinarily span one notch above and below the indicated rating. For example, an "Aggressive" FRP and a "Strong" BRP is indicative of a 'BB' rating according to the matrix. The 'BB' rating is the midpoint, meaning the suggested range would be 'BB+' to 'BB-'. Staff will determine which indicative rating to use by evaluating the Debt/Capital ratio. For example, an "Aggressive" FRP has a Debt/Capital ratio of 50%-60% according to the financial risk indicative ratios. Staff would divide the 50%-60% into thirds to represent 3 notches in the range. Therefore, using an "Aggressive" FRP and a "Strong"

[1] "Excellent" is considered to be the least risky of all of S&P's business risk profiles.

[2] S&P RatingsDirect, May 27, 2009, "Criteria Methodology: Business Risk/Financial Risk Matrix Expanded" (Attachment A).

BRP as an example, the midpoint of 'BB' may be represented by a Debt/Capital ratio of 53.33%-56.66%, 'BB+' may be represented by a Debt/Capital ratio of 50.00%-53.32% and 'BB-' may be represented by a Debt/Capital ratio of 56.67% - 60%.

Capital Structure Determination:

In situations in which a small water and sewer utility has debt capital in excess of 75%, the FA Department believes it is appropriate to use a hypothetical capital structure that limits debt to 75% of total capital. Although it could be argued that Staff should also use a hypothetical capital structure if a company's capital structure is not cost efficient due to a high equity ratio, the FA Department decided not to limit the amount of equity in the capital structure. If a company shows that its capital structure consists of more than 75% debt, then a hypothetical capital structure of 75% debt and 25% equity will be assumed. For all situations wherein a small water and sewer company has debt capital less than 75%, the company's actual capital structure will be used in determining the company's ROR. Assuming the company's current cost of debt is reasonable for a hypothetical capital structure of 75% debt and 25% equity, Staff may use this current cost of debt. If the company's current cost of debt is unreasonable due to over use of leverage, Staff may use a hypothetical cost of debt.

The FA Department will rely on the company's financial statements to estimate the ratemaking capital structure if these financial statements provide an accurate and reliable representation of the capital that supports the company's investment in the utility's assets. However, if a company's rate base is not consistent with the carrying value of the assets in the financial statements, Staff will impute the rate base number as plant and subtract the amount of debt from rate base to estimate the amount of equity in the capital structure.

Cost of Common Equity:

The Department recognizes that the estimation of the cost of common equity for a utility is not an exact science. Therefore, the Department will recommend a reasonable ROE range based on the specific circumstances of each case. For example, absent specific circumstances, the Department usually recommends an ROE range of no more than 100 basis points in major rate cases. Staff may recommend the higher end of its range if the company is privately held and not marketable. Staff may recommend the low end of its range if the water and sewer operations are owned by a larger parent company that is publicly-traded or the company is considered to be marketable from an acquisition perspective.

Disclaimer:

This procedure may be subject to change at any time based on Staff's research on other approaches to address small water and sewer ROE recommendations and the availability

of additional and/or better resources that may allow for improvement to the determination of appropriate rates of return for small water and sewer.

Examples:

75.00% to 100% Equity: According to Table 1 in the May 27, 2009 S&P report, this is indicative of a "Minimal" FRP. Depending on the BRP, the benchmark credit rating could be anywhere from 'AAA' to 'A-'.

65.00% to 74.99% Equity: According to Table 1 in the May 27, 2009 S&P report, this is indicative of a "Modest" FRP. Depending on the BRP, the benchmark credit rating could be anywhere from 'AA' to 'BBB+'.

55.00% to 64.99% Equity: According to Table 1 in the May 27, 2009 S&P report, this is indicative of a "Intermediate" FRP. Depending on the BRP, the benchmark credit rating could be anywhere from 'A' to 'BBB'.

50.00% to 54.99% Equity: According to Table 1 in the May 27, 2009 S&P report, this is indicative of a "Significant" FRP. Depending on the BRP, the benchmark credit rating could be anywhere from 'A-' to 'BB+'.

40.00% to 49.99% Equity: According to Table 1 in the May 27, 2009 S&P report, this is indicative of a "Aggressive" FRP. Depending on the BRP, the benchmark credit rating could be anywhere from 'BBB' to 'BB-'.

25.00% to 39.99% Equity: According to Table 1 in the May 27, 2009 S&P report, this is indicative of a "Highly Leveraged" FRP. Depending on the BRP, the benchmark credit rating could be anywhere from 'BB-' to 'B+'.

Case Example for WACC Recommendation

Test year of Dec. 31, 200X for this case indicates the following regarding capital structure:

XYZ Sewer Systems, Inc
12/31/200X

Common Stock	$47,056	40%
Debt	$70,584	60%
Total Capital	$117,640	100%

Most of the time the amount of common stock will be broken down by par value of common stock, other paid in capital and retained earnings. One should make sure to include all components of common equity in this balance.

Debt Issuance	Amount	Cost	Percent	Weighted Cost of Debt
N/P United Bank of Union	$44,007.08	6.25%	62.34%	3.90%
N/P Jane Doe Corp.	$23,276.92	5.50%	32.98%	1.81%
N/P Doe Construction, Inc.	$ 3,300.00	5.50%	4.68%	0.26%
	$70,584.00		**100.00%**	**5.97%**

As you can see, the weighted cost of debt is figured the same as the overall weighted cost of capital. Based on the S&P ratings matrix the company has an "Aggressive" FRP and based on the company's ability to obtain a commercial loan from United Bank of Union, the BRP is considered "Strong". Based on Staff's determination of an "Aggressive" FRP and a "Strong" BRP, XYZ Sewer Systems credit profile is indicative of a 'BB-' rating.

Now that we have an estimated credit rating we need to determine a current yield on debt of the same rating. Staff currently obtains such data through its subscription to BondsOnline. Because yields can fluctuate from month-to-month, Staff believes it is appropriate to use a 3-month average yield. Staff uses 30-year utility bond yields because it is assumed that utility stock investors' required returns are closely tied to required returns for long-term bond investments.

Although the following example is only based on the debt yield for one month, May 2011, simply use the same methodology for the other two months and average the 3 yields to determine the appropriate reference yield.

Based on the methodology discussed above, the risk premium would be added to the reference yield consistent with a 'BB-' rating for a 30-year bond, which is 4.29% + 3.71% = 8.00% (see table below). Because the company is a privately-owned enterprise that doesn't issue its own debt or its parent company doesn't issue debt, you add a 4% risk premium to arrive at a cost of equity recommendation of 12%.

Reuters Corporate Spreads for Utilities
May 2011 Average

Rating	1 yr	2 yr	3 yr	5 yr	7 yr	10 yr	30 yr
Aaa/AAA	13	20	22	27	29	36	39
Aa1/AA+	22	28	32	37	69	74	79
Aa2/AA	27	32	37	47	77	79	84
Aa3/AA-	28	39	53	58	85	90	95
A1/A+	32	42	56	77	93	103	114
A2/A	37	47	62	87	104	109	116
A3/A-	47	57	82	97	114	119	129
Baa1/BBB+	77	82	97	122	119	124	159
Baa2/BBB	95	102	122	142	149	154	179
Baa3/BBB-	97	117	127	147	159	164	194
Ba1/BB+	101	121	131	151	161	181	216
Ba2/BB	121	146	161	191	201	231	271
Ba3/BB-	131	156	166	196	231	351	371
B1/B+	166	171	191	271	286	381	441
B2/B	171	201	296	371	421	511	641
B3/B-	191	346	471	571	621	676	761
Caa/CCC+	366	471	572	636	646	761	861
US Treasury Yield	0.19	0.56	0.94	1.84	2.51	3.17	4.29

XYZ Sewer Systems, Inc.
Cost of Capital as of 12/31/200X

Capital Component	Amount	%Capital	Cost	Weighted Cost
Common equity	$ 47,056	40.00%	12.00%	4.80%
Long-term debt	$ 70,584	60.00%	5.97%	3.58%
	$117,640	100.00%		8.38%

Small Utility

Return on Equity (ROE)/Rate of Return (ROR)

Methodology

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Schedule DM-3

Financial Analysis Small Water and Sewer Return on Equity (ROE) Determination

The Financial Analysis Department (Department) created a spreadsheet in 1997 that was used to determine an approximate return on equity (ROE) given a small water and sewer company's level of financial risk, i.e., the amount of debt contained in its capital structure.

The Department believed that the recommended ROE for the state's largest investor owned water company was a sufficient baseline ROE for small water and sewer companies during the late 1990s. The Department recommended an ROE range of 10.10% to 11.10% in the 1997 Missouri American rate case (WR-97-237). This case had a test year of March 31, 1997. As a result, the Department concluded that an appropriate range for small water and sewer companies was somewhere between 11.0% and 13.0%. The Department made the necessary assumption that the business risk was the same for all small water and sewer companies. This was a reasonable assumption considering that businesses that operate in the same industry tend to face the same business risks.

The Department concluded that a 200-basis point range (2% range) allowed for sufficient recognition of the varying financial risks inherent in the wide range of small water and sewer companies' capital structures. Additionally, the Department believed that the approximate additional 100-basis point risk premium adjustment to the lower end of the range recognized the fact that many of these small water and sewer operations are not highly marketable to large investor-owned water and sewer companies because of their lack of profitability. An example of the undesirability of the assets of these small water and sewer companies to investors is the fact that many times lending institutions require the owner to pledge their own personal property rather than collateralizing the small water and sewer system. Lending institutions realize that their chance of recovery of their investment is not likely to come from the water and sewer system, but in the personal assets of the owner.

The formula for the calculation was relatively simple and represented a linear relationship between the percentage of a company's capital structure that was considered to be debt and the percentage of a company's capital structure that was considered to be equity. A company that had 0% debt and 100% equity was granted an ROE of 11.0%, while a company that had 100% debt and 0% equity was granted an ROE of 13.0%.

In most Missouri small water and sewer companies, there existed a combination of debt and equity in a situation other than the 'all-or-none' scenario described above. If a company had a 50/50 split between debt and equity, the ROE was calculated to be 12.0%. If a company had 25% debt and 75% equity, the ROE was calculated to be 11.5%. If a company had 75% debt and 25% equity, the ROE was calculated to be 12.5%.

The Department conducted a study in 2005 based on the 2003 Missouri American rate case (WR-2003-0500) to update the ROE range for a small water and sewer company. The Staff determined that the cost of equity was almost 200 basis points lower than the recommendation in 1997. Additionally, the embedded cost of debt, which is usually just

a matter of a mechanical calculation with very little judgment, was 7.78% in Missouri American's 1997 case, whereas in the 2003 case, the embedded cost of debt was 5.95%, a little less than a 200-basis point decline. All of this evidence provided support for the Staff's decision to lower its recommendation for small water and sewer companies in the 2005 study.

The Department believes that the cost of capital in the U.S. marketplace has increased since 2003 and the 2005 case study. For example, the Department recommended an ROE range of 8.26% to 9.26% in the 2003 Missouri American rate case (WR-2003-0500). This case had a test year of December 31, 2002. Since then, there have been two more Missouri American rate cases, one in 2007 (WR-2007-0216) with a test year of June 30, 2006 and one in 2008 (WR-2008-0311) with a test year of December 31, 2007. Staff's ROE recommendation of 8.60% to 9.60% in the 2007 Missouri American rate case reflects Staff's estimation that Missouri American's cost of equity was 35 basis points higher than the recommendation in the 2003 rate case. Staff's ROE recommendation of 9.60% to 10.60% in the 2008 Missouri American rate case was 100 basis points higher than the 2007 case. The embedded cost of debt was 5.25% in Missouri American's 2007 case, whereas in the most recent Missouri American case, the embedded cost of debt was 6%, a 75-basis point increase. This evidence provides support for Staff's decision to increase its recommendations for small water and sewer companies.

The Department continues to believe that the recommended ROE for the state's largest investor-owned water company continues to be a sufficient baseline ROE for small water and sewer companies. As a result, the Department concludes that an appropriate range for a small water and sewer company is now somewhere between 9.5% and 13.0%. The Department concluded that a 200-basis point range was an appropriate range for small water and sewer companies in the late 1990s. However, the Department widened the range by 100 basis points in the 2005 study to take into consideration that as more debt is added to the capital structure the incremental required return on equity will become larger. The wider range of estimates takes this into consideration. The Department has decided to widen this range by an additional 50-basis points because of the increase in required risk premiums for lower credit quality debt. A lower credit rating would make it harder for a company to acquire capital at a reasonable cost, but a higher credit rating would make it easier to acquire capital for the company at a reasonable cost. This affects the company's cost of capital.

The new formula is identical to the linear relationship established in the old formula. However, the low end of the range is now 50 basis points higher than the previous low ROE in the 2005 study and the high end of the range is 100 basis points higher than the previous high ROE in the 2005 study. For example, a company that had 0% debt and 100% equity is granted an ROE of 9.5% (previous rate 9.0%); while a company that had 100% debt and 0% equity is granted an ROE of 13.0% (previous rate 12.0%).

In most Missouri small water and sewer companies, there currently exists a combination of debt and equity in a situation other than the 'all-or-none' scenario described above. If a company had a 50/50 split between debt and equity, the ROE is calculated to be 11.25%

(previous rate 10.5%). If a company had 25% debt and 75% equity, the ROE is calculated to be 10.38% (previous rate 9.75%). If a company had 75% debt and 25% equity, the ROE is calculated to be 12.13% (previous rate 11.25%).

Although the above scenarios contemplate a specific point estimate for a ROE recommendation, the Department recognizes that the estimation of the cost of common equity for a utility is not an exact science. Therefore, the Department will recommend a reasonable ROE range based on the specific circumstances of each case. For example, absent specific circumstances, the Department usually recommends an ROE range of no more than 100 basis points in major rate cases.

The Department believes that it is appropriate to review the recommended ROE for small water and sewer companies upon the completion of each subsequent request for rate relief filed by Missouri-American or a complaint case filed by the Staff. The next ROE update will be completed within 60 days following the effective date of the Commission Order/Stipulation and Agreement in the next Missouri-American request for rate relief or complaint case filed by the Staff.

This procedure may be subject to change at any time based on Staff's research on other approaches to address small water and sewer ROE recommendations.

Case Example

Let's walk through an example of a utility for which a rate of return is calculated-XYZ Sewer Systems, Inc.. You coordinated with the auditor for this case and they indicated they were using a test year of Dec. 31, 200X for this case, and provided you with the following financial data:

XYZ Sewer Systems, Inc
12/31/200X

Common Stock	$21,402
Debt	$96,238
Total Capital	$117,640

Most of the time the amount of common stock will be broken down by par value of common stock, other paid in capital and retained earnings. One should make sure to include all components of common equity in this balance.

Debt Issuance	Amount	Cost	Percent	Weighted Cost of Debt
N/P United Bank of Union	$57,536.88	7.25%	59.79%	4.33%
N/P Jane Doe Corp.	$35,400.91	6.00%	36.78%	2.21%
N/P Doe Construction, Inc.	$ 3,300.00	6.00%	3.43%	0.21%
	$96,237.79		**100.00%**	**6.75%**

As you can see, the weighted cost of debt is figured the same was as the overall weighted cost of capital.

There are two other items that need to be addressed that can increase or decrease the cost of capital: issuance expense or costs of issuance and premium/discount. Issuance expenses can include: re-rating fee, bond counsel, financial advisor, trustee/paying agent/escrow agent, printing, consultants, verification, underwriter's counsel, auditor and other fees. Premium occurs when debt is issued at above bond face value. This premium actually decreases the cost of debt. It can be added to the proceeds received or subtracted from expenses. Discount occurs when debt is issued at below face amount, or the company receives a lower dollar amount than they must pay when the issue matures. This tends to increase the cost of debt. It can be subtracted from the proceeds received or added to the expenses.

XYZ Sewer Systems, Inc.
Cost of Capital as of 12/31/200X

Capital Component	**Amount**	**%Capital**	**Cost**	**Weighted Cost**
Common equity	$ 21,402	18.19%	12.37%	2.25%
Long-term debt	$ 96,238	81.81%	6.75%	5.52%
	$117,640	100.00%		7.77%